

Effect of Metformin and Pioglitazone Treatment on Cardiovascular Risk Profile in Polycystic Ovary Syndrome

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ABSTRAK

Tujuan: untuk membandingkan efektivitas metformin dan pioglitazon dalam memperbaiki resistensi insulin dan faktor risiko kardiovaskular pada wanita dengan sindroma ovarium polikistik (SOP). **Metode:** penelitian ini merupakan uji klinik acak untuk membandingkan terapi metformin dengan pioglitazon. Lima puluh dua wanita dengan SOP berusia 20-45 tahun dialokasi secara acak ke dalam dua kelompok perlakuan. Seluruh pasien menjalani pemeriksaan klinis dan biokimiawi serta pemeriksaan gula darah puasa (GDP), profil lipid dan indeks masa tubuh (IMT), serta kadar insulin serum sebelum dan sesudah perlakuan data dianalisis dengan MANOVA repeated measure. **Hasil:** berat badan dan IMT secara bermakna menurun pada kelompok metformin, tetapi tidak pada kelompok pioglitazon. GDP, kadar trigliserida serum dan kolesterol total menurun secara bermakna, baik pada kelompok metformin maupun kelompok pioglitazon. Resistensi insulin diukur dengan metode homeostasis model assessment (HOMA) dan secara bermakna menurun pada kedua kelompok perlakuan ($P < 0,05$). Tidak ada perbedaan bermakna pada sebagian besar variabel, kecuali IMT. **Kesimpulan:** hasil penelitian ini menunjukkan bahwa pioglitazon sama efektifnya dengan metformin dalam memperbaiki sensitivitas insulin dan biomarker risiko kardiovaskular; tetapi tidak menimbulkan efek yang bermakna pada penurunan IMT dan berat badan.

Kata kunci: sindroma ovarium polikistik, metformin, pioglitazon, resistensi insulin, faktor risiko kardiovaskular.

ABSTRACT

Aim: to compare the effectiveness of metformin and pioglitazone in ameliorating insulin resistance and cardiovascular risk factors in women with polycystic ovary syndrome (PCOS). **Methods:** this study was a randomized clinical trial to compare treatment with metformin and pioglitazone. Fifty two women with PCOS aged 20-45 years were randomly allocated to one of the two treatment groups. All patients underwent clinical and biochemical evaluation and analyses involving these measures which consisted of repeated measures MANOVA using the pre- and post-intervention fasting blood sugar (FBS), lipid profiles, body mass index (BMI), serum insulin in two groups. **Results:** weight and BMI were significantly decreased in metformin group but not in case of pioglitazone. FBS, serum triglycerides, total cholesterol were all reduced significantly by both metformin and pioglitazone. Insulin resistance measured by homeostasis model assessment (HOMA) method was significantly decreased in both treatment groups ($P < 0.05$). There were no significant differences between treatments in most of variables except BMI. **Conclusion:** these results suggest pioglitazone is as effective as metformin in improving insulin sensitivity and some cardiovascular risk biomarkers but it has no significant effect on reducing BMI and body weight.

Key words: polycystic ovary syndrome, metformin, pioglitazone, insulin resistance, cardiovascular risk factor.